



M.Sc. III Semester Degree Examination, April/May - 2023

CHEMISTRY

DSC, DSE : Chemistry of Heterocyclic Compounds

(CBCS)

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with Question No. **1 (Q1) Compulsory**, each question carries **equal** marks.

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1. (a) Describe any two methods of preparation of pyrrole. 5+5+4=14
(b) Explain the electrophilic substitution reactions of pyridine.
(c) Write a note on nomenclature of heterocyclic compounds.
2. (a) Discuss the Fisher-Indole synthesis. 5+5+4=14
(b) Explain the important meso-ionic heterocycles type A & B and their applications.
(c) Outline the step involved in Skraup synthesis of quinoline.
3. (a) Write the synthesis of androsterone and its uses. 5+5+4=14
(b) Outline the synthesis of Cephalexin.
(c) Write a note on antihypertensive drugs.
4. (a) Mention the steps involved in the synthesis of papaverine. 5+5+4=14
(b) Explain the double helix structure of DNA.
(c) Discuss the steps involved in Determination of ring structures of maltose.
5. (a) Describe the Corey synthesis of PGE₂. 5+5+4=14
(b) Outline the step involved in the biosynthesis of Flavonoids using shikimic acid pathway.
(c) Write a note on biosynthesis of Quercetin.



- 6.** (a) Discuss the electrophilic and nucleophilic substitution reactions of indole. **5+5+4=14**
(b) Discuss the steps involved in Determination of ring structures of morpholine.
(c) What are antidepressants give an example ? Explain the Proton Pump.
- 7.** (a) Discuss the modern method of synthesis of peptide. **5+5+4=14**
(b) Sketch the synthesis of Haemoglobin.
(c) Write a note on purine & pyrimidine bases.
- 8.** (a) Outline the resonance of bezofuran and mechanism. **5+5+4=14**
(b) Write a note on Chemical and enzymatic hydrolysis of nucleic acids.
(c) Explain the steps involved in the synthesis of ergosterol.

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